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THE EFFECT OF THE SCHOOL ATTENDED ON THE
DEVELOPMENT OF STUDENT'S STUDY HABITS
AND ATTITUDES

by

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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled The Effect of the School Attended on the Development of Student's Study Habits and Attitudes, submitted by M. Craig Spencer in partial fulfilment of the requirements for the degree of Master of Education.

ABSTRACT

The problem investigated in this research was whether the school which students attend is related to their study habits and attitudes.

The Brown-Holtzman Survey of Study Habits and Attitudes was administered to the students in the sample both after they had graduated from various junior high schools and again after a year in various senior high schools. Two hypotheses were tested. The first hypothesis tested was that it is possible to discriminate among the students who graduate from different junior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores. The second hypothesis tested was that after one year in high school, student's study habits and attitudes will change in such a manner that it will be possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores.

The seventy-five questions on the Brown-Holtzman Survey of Study Habits and Attitudes were treated as separate variables and the scores of the final sample on the pre-treatment test data were subjected to a factor analysis. Analyses of covariance were then performed on the eight factors identified. The student's scores on the Pineo-Porter Measure of Occupational Prestige were used as the covariate.

The first hypothesis was partially supported but there was no support for the second hypothesis. Therefore, it was concluded that the school which students attend is not related to their study habits and attitudes.

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CHAPTER I

INTRODUCTION

Underlying achievement is the ability to develop a set of study habits and attitudes which when used effectively guarantee maximum returns. In other words, study habits and attitudes become the vehicle by which the gifted, using superior ability may reach successful mastery of a desired learning. It matters little that he can read well if he does not know and apply the basic reading skills, the tools of research, and the needed discipline to gather, synthesize, organize and present his data. (Sister Josephina, 1960, p. 367)

Although this statement mentions only how superior students would benefit from better study habits and attitudes, it has implications for most of the students in our schools today. The development of effective study habits and attitudes is a means of increasing the ability of most students to comprehend, analyse, synthesize and evaluate information to which they are exposed (Young, 1966).

In order to aid students in developing the study habits and attitudes which would increase their academic performance, researchers and educators first centered on the problem of defining and measuring good study habits and attitudes. Only recently have instruments measuring study habits and attitudes been developed which have been shown to predict academic success with a high degree of reliability. The second step in aiding a student to improve his study habits and attitudes has usually been administration to the student of a study inventory to determine how his individual study habits and attitudes differ from those of high achieving students.

A remedial program is then outlined for the student which hopefully will aid him in unlearning all of his poor study habits and attitudes and aid him in learning new ones which have been shown to correlate with high academic achievement. Entwisle (1960) reviewed twenty-two such programs and reported that in some cases there was success in raising the students academic success while in other cases there was no success. Thus it appears that although researchers have gained some appreciation of the kinds of attitudes and study habits which correlate with academic achievement they have not as yet been able to suggest effective ways of improving study habits so that improvement in academic achievement follows.

Lack of research information is also evident with regard to how study habits and attitudes develop ordinarily. The results of research into the problem of study habits and attitudes seem to indicate that, although what constitutes good and poor study habits and attitudes is known, there is very little known about what factors influence the development of these study habits and attitudes.

Purpose of this Research

The present research has been undertaken because of the importance of the identification of factors which influence the development of study habits and attitudes. The question to be investigated in this research is whether the school which a student attends is a factor which influences the study habits and attitudes which he develops.

Justification of this Research

Justification for further research about study habits and attitudes comes from the following lines of reasoning. The measured correlation between scores on measures of study inventories and academic achievement is not as high as many educators think the relationship is in reality (Sister Josephina, 1960; Young, 1966). The implication here is that there may be factors which are associated with study habits and attitudes that have not been defined. Therefore investigation should continue in an attempt to discover and measure the importance of such factors to study habits and attitudes, and either improve our ability to predict academic success by using these additional factors related to study habits and attitudes, or present evidence that study habits and attitudes are not as important to academic success as supposed by many educators.

The question to be investigated in this research is whether the school which a student attends is a factor which influences the study habits and attitudes which he develops. It seems possible for the school to influence the development of study habits and attitudes in two general ways. Firstly, it may be that some conditions which influence the development of student study habits and attitudes do so in differing degrees in different schools. For example, the students in one school may be more motivated to work for high scholastic standing than students attending another school and consequently students attending the two schools may develop different study habits and attitudes. Secondly, it may be

that in any one school there may be different conditions from those in any other school which influence the development of different study habits and attitudes among its students. For example, it may be that the policy of allowing the students in one school to take a supervised study period when students in another school are not allowed to do so may be influential in the formation of different study habits and attitudes.

If factors such as these influence the study habits and attitudes which students develop, a partial explanation of the discrepancy between expressed and measured correlations between scores on study inventories and academic success may be forthcoming. It may be that the inclusion of questions concerning general school practices in future study inventories may improve our ability to predict academic achievement using this type of instrument.

The second justification for doing research about study habits and attitudes arises from the goal of educators to improve the academic success of poorly achieving students. It seems reasonable to assume that since measures of student study habits and attitudes show a correlation with academic success, one way to improve the academic performance of students might be by improving their study habits and attitudes. At the present time it appears that this improvement may be achieved only after special individual action on the part of the student. He may take a study inventory, have his special study weaknesses diagnosed, then develop study habits and attitudes more like those of better achieving

students. He may do this by obtaining one of the many books on study skills and following the suggestions presented; or he may attend a special class designed to improve study habits and attitudes, if one is available. The phrase "improvement may be achieved" is used here because there is no definitive research showing that following either of the first two methods will in fact improve study habits and attitudes and thereby improve academic success. Evidence supplied by Entwisle (1960) is not highly convincing. While there is no doubt that some students profit from "how to study" reading and "how to study" courses the majority of students involved in the researches reviewed by Entwisle did not profit from these efforts.

Even though only a few students profit, school counseling services have made these methods of improving study habits and attitudes available to students. Furthermore, these services are usually participated in only by students who come voluntarily for help, and this represents only a small percentage of students who might be helped by these services. If it were found that the school attended does indeed influence the development of study habits and attitudes and that students attending one school develop better study habits and attitudes than students from another school, the identification of the factors within the schools which contribute to these differences would become an important problem. Any success in identifying these factors could, in turn, be an important step in aiding school officials in knowing

how to help students develop good study habits and attitudes.

Hypotheses to be Investigated in this Study

In order to investigate the question of whether the school which a student attends is a factor which influences the study habits and attitudes which he develops, the following hypotheses have been formulated.

Hypothesis I

It is possible to discriminate among the students who graduate from different junior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores.

Hypothesis II

After one year in high school, student's study habits and attitudes will change in such a manner that it will be possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores.

CHAPTER II

REVIEW OF RELATED LITERATURE AND THEORETICAL ORIENTATION

I. THE DEVELOPMENT OF MEASURES OF STUDY SKILLS

Symonds (1926) published one of the first articles concerning methods of investigating study skills. The first instrument to measure study skills was published by Wrenn (1933). Wrenn's instrument was an inventory which was developed on the basis of an item analysis of the responses to a check list of study practices made by high and low scholarship university student groups matched for intelligence scores and major field of study. Wrenn (1933) reported correlations varying from .24 to .48 between inventory scores and grade point averages, but using the same instrument, Reeder (1935) and Gordon (1941) reported lower correlations.

Following the partial success shown by Wrenn (1933), there were many other similar surveys published in an effort to realize a higher correlation between scores on measures of study skills and academic success. Locke (1940), Brown (1941), Gordon (1941), Brooks and Heston (1945), and Schlessor and Young (1945) all constructed such instruments. However, the correlations between scores on their instruments and measures of achievement were slight, the median correlation being about .20.

These educators were measuring the mechanics of study which

differentiated the high achiever from the low achiever, and their results were, in general, unrewarding. Other educators began to suggest that the attitudes a student has toward school work, rather than the purely mechanical study procedures, might be of considerable importance in influencing academic success. In a three year clinical study of girls at Sarah Lawrence College, Tiebout (1943) concluded that the presence of a "lazy student syndrome" was characteristic of students whose scholastic records were poorer than aptitude scores would predict. This syndrome consisted of four personality characteristics: (1) a tendency to have interests of a transitory nature, (2) a need to rely upon strong and immediate motivations to start studying, (3) a tendency to be governed by strong hedonistic principles, and (4) a deep seated problem in learning. Tiebout (1943) concluded that these characteristics contributed to a superficial and haphazardly disorganized quality in written work, a tendency to gloss over failures, a rationalizing of poor achievement, and an inclination to procrastinate. Yet the students described by this syndrome showed continual optimism about changing for the better.

Tiebout (1943) has undoubtedly described characteristics which can be ascribed to a large portion of the population at some time during their lives. His study loses a great deal of its possible usefulness because of his lack of a clear definition of terms, especially in describing a "lazy student" as one with a "deep seated problem in learning". This statement could refer

to any of a great number of learning problems and after a three year study a more precise description of "learning problems" is to be expected.

Although Tiebout's (1943) research at first seems to be of little value, he did infer that attitudes toward studying were related to achievement, and his research provided inspiration for efforts to construct and validate an instrument that would measure a student's attitudes and motivation toward studying, as well as the mechanics of study.

Instruments of this sort include both the California Study Methods Survey devised by Harold D. Carter, and the Spitzer Study Skills Test constructed by Herbert F. Spitzer. Another such instrument which Deese (1959) describes as "more suited for uncovering attitudinal and motivational difficulties than any other published inventory (p. 782)," is the Brown-Holtzman Survey of Study Habits and Attitudes. Because of its effectiveness in uncovering attitudinal and motivational differences, this instrument, henceforth referred to as the SSHA, was chosen as the criterion measure in this research.

Researchers using the SSHA have reported odd-even reliability coefficients of .79 to .95 for different groups and different situations (Wrenn, 1959). Correlations between scores on this instrument and academic achievement in high school range between .22 and .54 for boys and from .26 to .51 for girls. The median correlation with achievement over fourteen studies was .44 for

boys and .41 for girls (Brown and Holtzman, 1956).

Cross-validation studies

There have been numerous cross-validation studies of the SSHA. Garwonski and Mathis (1965), in studying under-achievement, found that study habits and attitudes as measured by the SSHA play an important role in secondary school success. De Sena (1963) in his thesis research, concluded that the SSHA was the most effective discrimination and prediction instrument in identifying non-intellectual characteristics of consistent over-, under, and normal-achievers enrolled in science at the Pennsylvania State University. Martens (1964), studying the use of non-intellectual measures to predict academic success found that the SSHA was a significant predictor of academic success in English for boys and English, Mathematics, and Science for girls, in a sample of 179 grade nine pupils.

This research seems to justify using the SSHA as a measure of student study habits and attitudes.

II. THEORETICAL ORIENTATION

The hypothesis that the school which students attend affects the development of their study habits and attitudes gains support from research showing that the school attended affects other aspects of the student's behavior.

Siegal, Coon, Pepinsky, and Rubin (1956) concluded that

students from different schools and grades acted differently in a variety of typical school situations because of a difference in reference groups from which they evaluated their own behavior. Coleman (1961) found that there were "sub cultures" of the "adolescent culture" in different high schools which affected the values, activities, and interests of the students. The students from different high schools differed in such things as the importance of high academic achievement, the vocational goals most desired, the way they wanted to be remembered in their schools, the relative importance of making their parents proud of them, and in what was considered to be acceptable behavior in their associations among themselves.

Siegal et al. (1956), and Coleman (1961) report that the behavior exhibited by the students differed as the school they attended differed. These researchers also mention that a cause for this observed difference was the copying of the behavior of their different reference groups, or the people in the school from whom they derived their conceptions of how to act and against whom they evaluated their own behavior.

The finding that new behavior may be learned and the characteristics of existing responses may be changed, as a function of the interaction with other people, has been observed by many learning theorists. McDougal (1908), Humphrey (1921), Allport (1924), Miller and Dollard (1941), Hull (1943), Skinner (1953), Rotter (1954), and Mowrer (1960) have all taken account

of this type of learning in their writings.

To date, most of the research in the field of social learning, as it is most commonly referred to, has been to determine in what different situations this type of learning takes place. Bandura and Walters (1963) have presented the most complete summary of the research in this field. Their publication is a collection of the research done by themselves and other researchers which reviews situations where social learning principles have been used to explain the learning that has taken place. From this collection of data, they develop the position that "deviant and pro-social behavior can be accounted for by a single set of adequate social learning principles (Bandura and Walters, 1963, p. viii)." The principles that they present are concerned with explaining a wider range of behaviors than is the concern of this paper. Only the principles which are relevant to this research will be reviewed.

The first principle of social learning presented is that social learning takes place through the imitation of social models. Bandura and Walters (1963) state:

Although it is evident from informal observations that models are utilized in all cultures to promote the acquisition of socially sanctioned behavior patterns, the cultural importance of observational learning is especially apparent in accounts given by anthropologists of the process of socialization in societies other than our own. Indeed, in many languages, "the word for 'teach' is the same as the word for 'show', and the synonymy is literal" (p. 47).

The modeling of behavior has been demonstrated in a series of experiments by Bandura and his associates. In one

study, a group of children were exposed to aggressive adult models and a second group was exposed to models who displayed inhibited and nonaggressive behavior. For the aggressive model group the models exhibited unusual forms of physical and verbal aggression towards a large inflated plastic doll. In contrast, the non-aggressive model group observed an adult who sat very quietly, totally ignoring the doll and the instruments of aggression that had been placed in the room.

The children who observed the aggressive models displayed a great number of precisely imitative aggressive responses, whereas such responses rarely occurred in the nonaggressive model group.

In summing up their experiments in social learning, Bandura and Walters (1963) state that:

Experimental demonstrations of modeling effects have so far employed only aggressive behavior as the dependent variable. Anthropological and field-study data suggest, however, that other classes of responses may be readily acquired through the observation of social models (p. 64).

In discussing factors which determine whether new responses will be acquired through the observation of social models, Bandura and Walters (1963) review research by Lefkowitz, Blake, and Mouton (1955) who showed that reinforcers of high prestige are more likely to serve as major sources of imitative behavior. They also review research by Prince (1962) who found that reinforcement procedures are more effective when the agent of reward is a high prestige person than when the reinforcers are dispensed

by a person of low prestige.

Bandura and Walters (1963) also state that rewards are important in determining whether behavior will be imitated or not.

Imitative behavior is rewarded by the model and, in addition, brings rewarding consequences, provided the model exhibits socially effective behavior; consequently, most children develop a generalized habit of matching the responses of successful models (p. 4-5).

Other research has shown that the social learning history of an individual may modify his susceptibility to social influence that is exerted through reinforcement or modeling procedures (Baer, 1962). Bandura and Walters (1963) suggest, however, that since most members of a particular group share many common social experiences, the same reinforcers will be effective for most members of that group.

A probable description, based on principles of social learning, of how a student's study habits and attitudes may be influenced by the persons with whom he interacts within the school he attends follows:

Within the schools there are persons who come in contact with the students and are seen by the students as having high prestige value. These persons may be teachers, administrators, counselors, or fellow students. It is these persons who are chosen by students as models and whose behavior the students imitate. If the imitation of study habits and attitudes is rewarded by the models who are imitated, the study habits and attitudes will continue to be modeled and the behavior of the observer

will be modified. If the imitated study habits and attitudes are such that they lead to better academic achievement, then the student may also be rewarded with the "rewarding consequence" of higher achievement. This may not necessarily be the case, and the study habits and attitudes do not need to lead to increased academic achievement to be modeled. The reward offered by the model chosen by the student may be sufficient to cause the learning of behavior by modeling.

According to the social learning principles which are presented, a measured difference in student study habits and attitudes could be a result of imitation of persons with different study habits and attitudes within the different schools. Research by Andrews (1965) and Millar (1965) seems to support this hypothesis.

Andrews (1965) reporting research using the Organizational Climate Description Questionnaire, found that schools differed in climate "sets". He found that schools differed in characteristic tendencies toward high or low conditions as measured by the sub-tests of this instrument. He attributes this difference in "sets" to differences both in staff personnel and administrators within the schools.

Millar (1965) also reports that different schools had different climate "sets". He further reports that differences in "set" are related to differences in the level of academic achievement of students within the schools.

These findings show that differences in personnel within schools contribute both to measurable differences in climate "sets", and to differences in the academic attainment of students within the schools. Different schools, no doubt, have different individuals who serve as models with regard to study habits and attitudes. It seems plausible that the imitation of these different models would contribute to the formation of different study habits and attitudes by the students within the various schools.

To examine the question of whether there is evidence that the school attended affects the students' measured study habits and attitudes, the hypotheses presented in Chapter I will be empirically tested.

CHAPTER III

EXPERIMENTAL DESIGN

This research was designed in order to see whether the school which students attend is a factor which influences development of their study habits and attitudes. In order to investigate this question the Brown-Holtzman Survey of Study Habits and Attitudes was administered to the students in the sample both after they had graduated from various junior high schools and again after a year in various senior high schools. This was done to answer two questions. The first question was whether it was possible to discriminate among students graduating from the different junior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores. The second question was whether students' study habits and attitudes changed in such a manner that after one year in high school it would be possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools on the basis of the Brown-Holtzman Survey of Study Habits and Attitudes factor scores.

Because of the finding by Savage (1962) that students' socio-economic status was positively related to their study habits and attitudes, the Porter-Pineo Measure of Occupational Prestige was administered to the students in the sample. This instrument was used to see whether the graduates from the various junior high

schools did differ in socio-economic status and if so, to statistically control for this difference.

I. THE SAMPLE

The subjects for this research were students who graduated from a number of Edmonton junior high schools in 1966. They consisted of the graduates from all of the schools in both the Edmonton Public, and the Edmonton Separate, School Systems which were projected to enter ten or more graduates from grade nine into each of two senior high schools. There were forty-two schools in the Edmonton Public School System and thirty schools in the Edmonton Separate School System from which grade nine students graduated. It was found that three of the schools in the Edmonton Public and one of the schools in the Edmonton Separate School Systems fit the necessary requirements to be included in the sample of this research.

The actual numbers of students who graduated from the designated junior high schools and enrolled in the designated senior high schools were:

Graduates from Parkdale Junior High School	70
-enrolled in Victoria Composite High School	60
-enrolled in Eastglen Composite High School	10
Graduates from Eastwood Junior High School	82
-enrolled in Victoria Composite High School	24
-enrolled in Eastglen Composite High School	58

Graduates from Ottewell Junior High School	213
-enrolled in Bonnie Doon Composite High School	200*
-enrolled in McNally Composite High School	13
Graduates from St. Alphonsus Junior High School	23
-enrolled in O'Leary High School	14
-enrolled in St. Joseph's High School	9

These students comprise the original sample in this research.

However, some attenuation of subjects occurred between the pre-treatment test and post-treatment test, which were eight months apart. The reasons for the loss of subjects during the treatment are:

1. Students missed taking the pre-treatment test.
2. Students invalidated the pre-treatment test by failing to answer all of the questions.
3. Students completed the pre-treatment test and dropped out of school prior to the post-treatment testing.
4. Students completed the pre-treatment test and moved during the year to another school.
5. Students invalidated the post-treatment test by failing to answer all of the questions.

The number of students in the original sample, the number lost by the various attrition categories, and the number used in the statistical analysis are presented in Table I.

The discrepancies between the final and the original samples are partially a result of the investigator failing to

*A random sample of 50 students was obtained from the 200 graduates from Ottewell who enrolled in Bonnie Doon Composite High School.

TABLE I

A DESCRIPTION OF THE SAMPLE, INCLUDING THE JUNIOR HIGH SCHOOL THE STUDENTS GRADUATED FROM,
THE HIGH SCHOOL THEY ATTENDED, THE NUMBER OF STUDENTS FROM EACH SCHOOL WHO
WERE TESTED, THE NUMBER LOST BY ATTRITION, AND THE NUMBER INCLUDED IN THE
FINAL SUB-SAMPLES

Junior High School	Parkdale	Eastwood	Ottewell	St. Alphonsus
Number of Graduates	70	82	63	23
Senior High School	Victoria--Eastglen	Victoria--Eastglen	McNally--B.D.	O'Leary--St. Joseph's
Number of Students:				
Attending the Senior High School	60	24	58	14
Taking the Pre-Treatment Test	50	20	54	14
Missing the Pre-Treatment Test	10	4	0	2
Voiding the Pre-Treatment Test	11	4	0	0
Completing the Pre-Treatment Test and Dropping Out	2	1	0	0
Completing the Pre-Treatment Test and Moving	5	0	1	0
Completing the Pre- and Post-Treatment Tests	32	15	42	12
Voiding the Post-Treatment Test	3	0	0	0
Included in the Final Sub-Samples	29	15	42	9

follow up those students who were absent for the first testing, and a failure to check the student's pre-treatment test for incomplete answer blanks. Further losses due to these shortcomings were minimal during the post-treatment testing.

t tests showed that there were no differences significant at the .05 level in intelligence, as measured by the Scholastic Ability Test, or achievement as measured by grade nine achievement stanines*, between the students included in the final sub-samples and the students from the sub-samples lost due to the various attrition categories (Tables II, III).

t tests also showed that there were no differences significant at the .05 level in socio-economic status as measured by the Porter-Pineo Measure of Occupational Prestige between the students included in the final sub-samples and the students from the sub-samples who took the pre-treatment test and then were lost due to the attrition categories (Table IV).

II. INSTRUMENTS USED

The instrument which was administered to the students in the sample in September and again in May as the criterion measure of this study was the Brown-Holtzman Survey of Study Habits and Attitudes. This is an inventory consisting of seventy-five statements concerning study practices and attitudes. For each statement a five point scale is provided for the student to indicate

*The students' results on the Scholastic Ability Test and their grade nine achievement stanines were obtained from the Edmonton Public, and the Edmonton Separate School Board offices.

TABLE II

SIGNIFICANCE OF DIFFERENCES BETWEEN MEANS ON THE SCHOLASTIC ABILITY
TEST PERCENTILE SCORES* OF STUDENTS IN THE FINAL SUB-SAMPLES
AND STUDENTS FROM THE SUB-SAMPLES DELETED
DUE TO ATTRITION

Sub-Sample		Mean	Difference Between Mean	Sig. of Difference
Eastwood-Victoria	Final Sub-Sample	61.80	2.80	N.S.
	Attrition Group	59.00		
Eastwood-Eastglen	Final Sub-Sample	56.95	1.43	N.S.
	Attrition Group	55.52		
Parkdale-Victoria	Final Sub-Sample	54.14	3.41	N.S.
	Attrition Group	50.73		
Parkdale-Eastglen	Final Sub-Sample	51.81	1.61	N.S.
	Attrition Group	50.20		
Ottewell-McNally	Final Sub-Sample	60.20	4.20	N.S.
	Attrition Group	56 (One Case)		
Ottewell-Bonnie Doon	Final Sub-Sample	65.08	3.24	N.S.
	Attrition Group	68.24		
St. Alphonsus- O'Leary	Final Sub-Sample	55.72	.70	N.S.
	Attrition Group	54.02		
St. Alphonsus- St. Joseph's	Final Sub-Sample	51.83	---	---
	Attrition Group	No Cases		
TOTAL	Sample	59.69	1.80	N.S.
	Loss	57.89		

*Raw scores on the Scholastic Ability Test were not available.

TABLE III

SIGNIFICANCE OF DIFFERENCES BETWEEN MEANS ON GRADE NINE AGGREGATE
ACHIEVEMENT STANINES OF STUDENTS IN THE FINAL SUB-SAMPLES AND
STUDENTS FROM THE SUB-SAMPLES DELETED DUE TO ATTRITION

Sub-Sample		Mean	Difference Between Means	Sig. of Difference
Eastwood-Victoria	Final Sub-Sample	5.8	0	N.S.
	Attrition Group	5.8		
Eastwood-Eastglen	Final Sub-Sample	5.5	.3	N.S.
	Attrition Group	5.8		
Parkdale-Victoria	Final Sub-Sample	5.8	.5	N.S.
	Attrition Group	5.3		
Parkdale-Eastglen	Final Sub-Sample	5.1	.1	N.S.
	Attrition Group	5.0		
Ottewell-McNally	Final Sub-Sample	5.0	0	N.S.
	Attrition Group	5.0		
Ottewell-Bonnie Doon	Final Sub-Sample	6.3	0	N.S.
	Attrition Group	6.3		
St. Alphonsus- O'Leary	Final Sub-Sample	5.6	.1	N.S.
	Attrition Group	5.5		
St. Alphonsus- St. Joseph's	Final Sub-Sample	5.3	---	---
	Attrition Group	No Cases		
TOTAL	Sample	5.4	.2	N.S.
	Loss	5.6		

TABLE IV

SIGNIFICANCE OF DIFFERENCES BETWEEN MEANS ON A MEASURE OF FATHER'S
OCCUPATIONAL PRESTIGE OF STUDENTS IN THE FINAL SUB-SAMPLES
AND STUDENTS FROM THE SUB-SAMPLES DELETED
DUE TO ATTRITION*

Sub-Sample		Mean	Difference Between Means	Sig. of Difference
Eastwood-Victoria	Final Sub-Sample	40.09	1.39	N.S.
	Attrition Group	38.70		
Eastwood-Eastglen	Final Sub-Sample	41.68	2.84	N.S.
	Attrition Group	38.84		
Parkdale-Victoria	Final Sub-Sample	36.71	2.11	N.S.
	Attrition Group	34.60		
Parkdale-Eastglen	Final Sub-Sample	42.46	---	---
	Attrition Group	No Cases		
Ottewell-McNally	Final Sub-Sample	50.95	.75	N.S.
	Attrition Group	50.20		
Ottewell-Bonnie Doon	Final Sub-Sample	46.42	1.45	N.S.
	Attrition Group	47.87		
St. Alphonsus- O'Leary	Final Sub-Sample	34.67	---	---
	Attrition Group	No Cases		
St. Alphonsus- St. Joseph's	Final Sub-Sample	34.75	---	---
	Attrition Group	No Cases		
TOTAL	Sample	40.93	1.11	N.S.
	Loss	42.04		

*No scores on the Porter-Pineo Measure of Occupational Prestige were obtained for students who missed taking the pre-treatment test.

whether he rarely, sometimes, frequently, generally, or almost always does or feels as the statement suggests. A guide is provided for the student by defining these terms on a percentage basis as follows.

- R - RARELY means from 0 to 15 per cent of the time.
- S - SOMETIMES means from 16 to 35 per cent of the time.
- F - FREQUENTLY means from 36 to 65 per cent of the time.
- G - GENERALLY means from 66 to 85 per cent of the time.
- A - ALMOST ALWAYS means from 86 to 100 per cent of the time.

The development of the SSHA was begun by Brown and Holtzman following a review of the literature and a series of group discussions with college freshmen and high school students. A total of 234 items were compiled from group interviews, existing inventories on study habits, and reports on related experiments in the field of learning (Brown and Holtzman, 1955). These items were generally of two kinds: those dealing primarily with the mechanics and conditions of studying; and those concerned with attitudes toward studying and motivation to do well in academic work.

This preliminary questionnaire was administered to twenty-two matched pairs of second semester freshmen. The matching was done on the basis of sex, marital status, length of time in college, total score on the ACE Psychological Examination, age, number of semester hours carried, and type of residence. One member of each pair came from the Dean's Honor List in the College of Arts and Sciences at the University of Texas (Brown and Holtzman, 1956).

Those items which discriminated between the high and low scholarship groups beyond the 20 per cent level were subjected to further cross-validation studies. The final revision of the questionnaire consists of fifty-two items which were found

to be the most significant predictors of academic success across the various student samples, along with twenty-three items which have been included for further experimentation.

The predictive validity coefficients for men and women in colleges and in high schools are presented in Table V. Brown and Holtzman (1956) do not specify whether they are referring to concurrent or predictive validity when they present these studies in the SSHA manual. The criterion in all studies was academic success.

TABLE V

THE PREDICTIVE VALIDITY COEFFICIENTS OF THE SSHA FOR MEN
AND WOMEN IN COLLEGE AND IN HIGH SCHOOL

	Lowest Reported r	Highest Reported r	Median r	No. of Studies
College Men	.27	.66	.40	13
College Women	.26	.65	.45	11
High School Men	.22	.54	.44	14
High School Women	.26	.51	.41	14

The odd-even reliability of the scores of a college sample on the SSHA has been found to be .92 for men and .84 for women. Based on a high school sample the reliability was .87 for males and .79 for females.

The test-retest reliability for a college sample after an eleven week period was .88 for men and .84 for women. The same

type of reliability for high school students after a six month period was .87 for men and .79 for women.

Some of the other significant studies utilizing the SSHA, and comments by other researchers on the instrument have been mentioned earlier in Chapter II.

Because the SSHA is a self-reporting instrument, there is no indication of the extent to which students describe their actual study habits and attitudes. In using this instrument it must be remembered that the results indicate the study habits and attitudes which the students describe themselves as having and that the instrument has been validated on this basis.

The Pineo-Porter Measure of Occupational Prestige

The second instrument used in this research is the Pineo-Porter Measure of Occupational Prestige, included in this study as Appendix B. This measure was introduced as a control because of the relationship between socio-economic status and academic achievement, which has been frequently demonstrated (Travers, 1949 and Henry, 1950). This particular measure was selected because it is based on a national study of occupational prestige for Canada. It includes 172 job titles rated along the dimensions of: the most or least desirable, the most or least interesting, the number of people the job affects, the freedom and independence of the job, the perceived income, skills, the benefit to society, and whether the job is difficult or easy.

Pineo and Porter's national sample included 793 cases which

were representative of the country on the following variables: sex, province, religious affiliation, occupation, mother tongue, and country of birth. Their sample failed to match the census on the variables of labour force status, age, marital status, official language, years of schooling, and size of community residence. Pineo and Porter (1966) further point out that their sample was over represented with middle aged, married people.

In reporting their data, the scores were transformed to a mean of 50, a standard deviation of 10, and a range of from 0 to 100, for ease of comparison with earlier, published prestige scores.

In this comparison, Pineo and Porter (1966) report a correlation of .93 between 22 occupations common to both their survey and that of Tuckman. The correlation between their scores and the Robson scores over thirty-one matching titles is reported as .96. In comparison with Blishen's scale, which is based on the 1951 Canadian census, Pineo and Porter (1966) report a correlation of .88 based on seventy-seven matching titles. They also state that they are still engaged in matching titles with Blishen's scale and that when they are finished, the differences may disappear.

III. TESTING

The SSHA was administered during the last week of September, and again during the last two weeks of May. As a measure of socio-economic status, each student wrote his father's occupation

on a space provided on the SSHA answer sheet. The students were instructed to write a few sentences describing their fathers occupation if it was an unfamiliar one. Students whose fathers were deceased or not supporting the family were instructed to write down the occupation which their father practiced when he was alive or when he was supporting the family. Students whose families were supported by welfare were asked to indicate this.

In all schools the testing took place in a room which had been reserved for the testing. An effort was made by the tester to set up a non-threatening situation before the inventory was administered by explaining to the students that this inventory was not a test and that their scores would not directly influence their report card marks. It was explained to them that this inventory consisted of a few questions which might aid them and other students to learn how to study more effectively. They were told that the results of this inventory were confidential but, they could find out the results themselves by seeing their school counsellor. The students were then instructed to read the instructions for the SSHA silently while the examiner read them aloud. After any questions were answered, the students began to respond to the inventory.

CHAPTER IV

STATISTICAL ANALYSIS AND RESULTS

In order to see if there was any support for the two hypotheses, the following statistical analysis was first performed. An analysis of variance of the student's scores on the Porter-Pineo Measure of Occupational Prestige indicated that the graduates from the different junior high schools were significantly different from each other beyond the .05 level. For this reason, analyses of covariances with the student's scores on the Porter-Pineo Measure of Occupational Prestige as the covariate, were used to examine any differences in study habits and attitudes among the student sub-groups as hypothesized.

These analyses of covariance were performed on the basis of the students' total scores on the Brown-Holtzman Survey of Study Habits and Attitudes. The results of these analyses indicated firstly that there were no differences among the graduates of the different junior high schools, and secondly that it was not possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools, on the basis of the total scores on the Brown-Holtzman Survey of Study Habits and Attitudes.

Because of these negative results, a decision was made to perform a factor analysis on the Brown-Holtzman Survey of Study

Habits and Attitudes and then perform other statistical analyses to see whether the students in the various sub-samples differed as hypothesized on any of the Brown-Holtzman Survey of Study Habits and Attitudes factors.

I. FACTOR ANALYSIS OF THE BROWN-HOLTZMAN SURVEY OF STUDY HABITS AND ATTITUDES

The seventy-five questions on the Brown-Holtzman Survey of Study Habits and Attitudes were treated as separate variables and the scores of the final sample on the pre-treatment test data were subjected to a factor analysis. It was found that twenty-four factors had Eigenvalues greater than one and so were significant. Since the purpose of this factor analysis was to identify factors to be later used as a basis to see if it would be possible to discriminate among different groups, reliability was an important consideration. Of the twenty-four factors, only the first six had five or more of the questions loading above the .300 level and all of the factors beyond factor ten had either two or three questions loading at this level. In order to obtain factors which would be more reliable, a second factor analysis was performed and the number of factors on which the SSHA questions could load was limited to ten. It was found that this second factor analysis provided eight factors with five or more questions loading significantly (.400), and the decision was made to use these eight factors from the Varimax rotation as indicators of differences in study habits and attitudes in this study.

Table VI contains the questions which loaded on each of the eight factors of the second analysis, as well as the description and name of each factor.

TABLE VI

RESULTS OF THE SECOND FACTOR ANALYSIS SHOWING THE QUESTIONS WHICH LOADED SIGNIFICANTLY ON EACH FACTOR WITH THEIR LOADINGS, AND THE NAME AND DESCRIPTION OF EACH FACTOR

FACTOR I - ORGANIZATION AND EFFICIENCY		
Loading	No. on SSHA	Question
.656	70	When preparing for an examination I arrange facts to be learned in some logical order--order of importance, order of presentation in class or textbook, order of time in history, et cetera.
.571	63	Before each study period I set up a goal as to how much material I will cover.
.554	73	If time is available, I take a few minutes to check over my answers before turning in my examination paper.
.499	58	When reading a long assignment, I stop periodically and mentally review the main facts and theories that have been presented.
.489	68	I prefer to study my lessons alone rather than with others.
.469	54	I am on time with written assignments.
.445	67	I keep my assignments up to date by doing my work regularly from day to day.
.404	66	I copy diagrams, drawings, tables, and other illustrations that the instructor puts on the blackboard.
.402	42	I strive to develop a sincere interest in every course I take.

The statements loading on factor one describe students who above all are concerned with being organized and with making efficient use of study time. The statements also describe students as paying careful attention to detail.

FACTOR II - INEFFECTIVE STUDY

Loading	No. on SSHA	Question
.630	59	I seem to accomplish very little in relation to the amount of time I spend studying.
.590	17	I get nervous and confused when taking an examination and fail to answer questions to the best of my ability.
.558	11	I memorize grammatical rules, definitions of technical terms, formulas, et cetera without really understanding them.
.465	55	I have difficulty in picking out the important points of a reading assignment--points that are later asked on examinations.
.460	64	I can concentrate on a reading assignment for only a short while before the words become a meaningless jumble.
.443	47	After reading several pages of an assignment, I am unable to recall what I have just read.
.434	38	I am unable to concentrate well because of periods of restlessness, moodiness, or "having the blues".
.422	41	When I sit down to study I find myself too tired, bored, or sleepy to study efficiently.

The statements loading on this factor describe the students who have not learned how to study effectively. They do not concentrate on their work and when they do study they have a problem recalling what they read. They seem to study at a superficial level.

The results of such a study are that the students know they accomplish little and find that they are unprepared for examinations.

FACTOR III - PROCRASTINATION

Loading	No. on SSHA	Question
.565	13	I take it easy and let my assignments collect for the first two of three weeks of a new semester.
-.543	67	I keep my assignments up to date by doing my work regularly from day to day.
.477	2	My dislike for a certain teacher causes me to neglect my school work.
-.475	54	I am on time with written assignments.
.472	21	Some of my courses are so uninteresting that I have to "force" myself to do the assignments.
.434	15	Lack of interest in my school work makes it difficult for me to keep my attention focused on assigned reading.

The statements loading on this factor describe students who do not have their assignments finished on time. They place most of the blame on a dislike for a certain teacher and a lack of interest in the course but the biggest problem seems to be procrastination.

FACTOR IV - OTHER ORIENTED

Loading	No. on SSHA	Question
.665	39	I put off writing themes, reports, term papers, et cetera, until the last minute.

.614	51	"Extracurricular activities"--dating, clubs, athletics, fraternity and sorority activities, et cetera--cause me to get behind in my work.
-.441	35	I keep my place of study business-like and cleared of unnecessary or distracting items such as pictures, letters, mementoes, et cetera.
.436	61	With me, studying is a hit-or-miss proposition depending on the mood I am in.
.436	10	I lose interest in my studies after the first few days or weeks.

The statements making up this factor describe students who put off writing assignments until the last minute because of other activities they would rather do and because of a lack of organization of both time and affairs.

FACTOR V - DISSATISFACTION WITH SCHOOL AUTHORITY

Loading	No. on SSHA	Question
.618	40	I feel that I am taking courses that are of little practical value to me.
.582	3	I feel that I would study harder if I were given more freedom to choose courses that I like.
.495	21	Some of my courses are so uninteresting that I have to "force" myself to do the assignments.
.454	1	I feel that teachers do not understand the student's problems.
.429	24	I believe that having a good time and getting one's full share of fun out of life is just as important as studying.
.421	16	Unless I really like a course, I believe in doing only enough to get a passing grade.
.420	9	I feel that teachers allow their personal like or dislike for a student to influence their grading unduly.

These statements express a desire for independence in choosing courses which is not presently enjoyed and a dislike for teachers whom the students see as the agents preventing them from enjoying this freedom. The statements also express the idea that these students see teachers as not understanding students problems and as being biased in their grading.

FACTOR VI - WRITTEN ENGLISH PROBLEMS

Loading	No. on SSHA	Question
.695	71	I am careless of spelling and in the mechanics of English composition when answering examination questions.
.663	18	I have trouble with the mechanics of English composition.
.517	7	Difficulty in expressing myself in writing slows me down on reports, themes, examinations, and other work to be turned in.
-.478	6	In preparing reports, themes, term papers, et cetera I make certain that I clearly understand what is wanted before I begin work.
.476	8	My teachers criticize my written reports as being hastily written or poorly organized.
.433	32	Difficulty in assembling ideas with order and clearness within a brief amount of time results in my doing poorly on examinations.
.433	72	Although I work until the last possible minute, I am unable to finish examinations within the allotted time.

These statements describe difficulty in all phases of written English which the students admit handicaps them in all written work.

FACTOR VII - "STEREOTYPE" TEENAGER

Loading	No. on SSHA	Question
.642	36	Telephone calls, people coming in and out of my room, "bull-sessions" with my roommate, et cetera, interrupt me while I am trying to study.
.609	65	I am interrupted by distracting noises while I am studying.
.582	51	"Extracurricular activities"--dating, clubs, athletics, fraternity and sorority activities, et cetera--cause me to neglect my school work.
.523	26	In taking reading notes, I tend to take down material which later turns out to be unimportant.
.448	23	Daydreaming about dates, future plans, et cetera, distracts my attention from my lesson while I am studying.
.444	49	I waste too much time "chewing the fat", reading magazines, listening to the radio, going to the movies, et cetera for the good of my studies.
.422	53	Problems outside of school--financial difficulties, being in love, conflict with parents, et cetera--cause me to neglect my school work.
.412	33	Some of my classes are so boring that I spend the class period drawing pictures, writing letters, or daydreaming instead of listening to the teacher.

These statements seem to describe the activities of the "stereotype" teenager. All of the statements are reasons why studying is not done or why important material is not learned.

FACTOR VIII - ATTEMPT TO IMPROVE

Loading	No. on SSHA	Question
.555	45	I carefully study the figures, graphs, and tables in a reading assignment.

-.497	34	I lay aside returned examinations, reports, and homework assignments without bothering to correct errors noted by the instructor.
.470	29	When I am having difficulty with my school work, I try to talk over the trouble with the teacher.
.469	42	I strive to develop a sincere interest in every course I take.
.431	52	I utilize the vacant hours between classes for studying so as to reduce the evening's work.

The statements loading on this factor are all good study habits and attitudes, as are the statements loading on factor one. Perhaps the difference in the two groups of statements is that those in factor eight deal with what some students do when they are having problems with school work; they correct their errors and talk over difficulties with their teachers, while the statements on factor one describe students who work hard all of the time, not just when they are having difficulties.

II. ANALYSIS OF DATA

For clarification in presenting the analysis of data, the junior high school and senior high school sub-samples have been coded by the following numbers and letters as presented in Table VII.

TABLE VII
CODE NUMBERS AND LETTERS OF THE VARIOUS SUB-SAMPLES

Junior High School Sub-Sample	Code	Senior High School Sub-Sample	Code
Ottewell	1	Ottewell-Bonnie Doon Ottewell-McNally	1A 1B
Parkdale	2	Parkdale-Victoria Parkdale-Eastglen	2C 2D
Eastwood	3	Eastwood-Victoria Eastwood-Eastglen	3C 3D
St. Alphonsus	4	St. Alphonsus-St. Joseph's St. Alphonsus-O'Leary	4E 4F

Because of the relationship between study habits and attitudes, and socio-economic status, which has been demonstrated by Savage (1962), and because the reasons presented in Chapter II, the Pineo-Porter Measure of Occupational Prestige was used in the statistical analysis to indicate any socio-economic differences among the sub-samples in this study.

An analysis of variance performed on the scores of the junior high school sub-samples on the Pineo-Porter Measure of Occupational Prestige indicated that there was a difference among the sub-samples in socio-economic status and this difference was significant at the .001 level (Table VIII).

TABLE VIII

SUMMARY OF THE ANALYSIS OF VARIANCE OF THE SCORES ON THE PINEO-PORTER MEASURE OF OCCUPATIONAL PRESTIGE FOR THE FOUR JUNIOR HIGH SCHOOL SUB-SAMPLES

Sources of Variation	Sum of Squares	Degrees of Freedom	Variance Estimate	Obtained F. Value	Sig.
Between	332704.00	3	110901.31	6.95	p < .001
Within	2599392.0	163	15947.18		

Because of this finding, analyses of covariance with the Pineo-Porter Measure of Occupational Prestige as the covariate were used throughout this study in order to see if it would be possible to discriminate among groups of students from different schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores after controlling for socio-economic differences among the groups.

Hypothesis I

After F tests of homogeneity of variance indicated that the population variances did not differ markedly from equality, an analysis of covariance was performed to see if it would be possible to discriminate among graduates from different junior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores. The Pineo-Porter Measure of Occupational Prestige was the covariate.

The results of this analysis of covariance indicated that on only one of the eight SSHA factors was there any difference among the graduates of different junior high schools after controlling for socio-economic differences. This difference was on factor five entitled "Dissatisfaction With School Authorities". The significance of the difference among the junior high school sub-samples was beyond the .01 level (Table IX).

TABLE IX

SUMMARY OF THE ANALYSIS OF COVARIANCE OF THE SCORES ON FACTOR FIVE
FOR THE FOUR JUNIOR HIGH SCHOOL SUB-SAMPLES

Sources of Variation	Degrees of Freedom	Variance Estimate	Adjusted F. Value	Sig.
Between	3	97.72	4.29	$p < .01$
Within	163	22.73		

t tests between the adjusted mean scores for the junior high school sub-samples determined that the difference among the junior high school sub-samples on factor five was found because one sub-sample (sample4) was significantly different from the other three junior high school sub-samples (Table X).

TABLE X

SUMMARY OF t TESTS TO DETERMINE THE SIGNIFICANCE OF THE DIFFERENCE
BETWEEN THE ADJUSTED MEANS OF JUNIOR HIGH SCHOOL SUB-SAMPLES ON
FACTOR FIVE

Sub-Sample	Adjusted Mean	t Value	Degrees of Freedom	Sig.
3 4	15.86 20.21	3.75	74	p < .001
2 4	17.30 20.21	2.12	56	p < .05
1 4	16.43 20.21	3.00	73	p < .01
3 2	15.86 17.30	1.44	91	N.S.D.
3 1	15.86 16.43	.63	107	N.S.D.
1 2	16.43 17.30	.87	90	N.S.D.

The findings that on only one of the eight SSHA factors was any discrimination among the junior high school sub-samples possible, and that on this one factor only one sub-sample was found to be significantly different from the other sub-samples produce very little support for hypothesis I. Therefore, hypothesis I; that it is possible to discriminate among students from different junior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores, is not supported.

Hypothesis II

Due to the complexity of the design used to test hypothesis II, and because of the number of senior high school sub-samples involved, the following overview is included before the statistical analysis.

In testing hypothesis II, that after one year in senior high school, student's study habits and attitudes will change in such a manner that it will be possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools on the basis of the Brown-Holtzman Survey of Study Habits and Attitudes factor scores, the following general outline was followed. Firstly, investigation proceeded to find out whether the sub-samples of students who attended the same junior high and then attended different senior high schools were significantly different from each other on any of the eight SSHA factors before they attended the different senior high schools.

This investigation entailed testing to see if the following pairs of senior high school sub-samples (see Table VII) were significantly different from each other; 1A and 1B; 2C and 2D; 3C and 3D; 4E and 4F, on any of the eight SSHA factors using pre-treatment test scores.

Secondly, investigation was undertaken to find out whether the students who attended the same junior high school and then attended different senior high schools were significantly different from each other on any of the eight SSHA factors after a year in

different senior high schools. This investigation also entailed testing to see if the following pairs of senior high school sub-samples were significantly different from each other; 1A and 1B; 2C and 2D; 3C and 3D; 4E and 4F, on any of the eight SSHA factors. In this second investigation post-treatment tests scores were used.

Statistical Analysis

After F tests of homogeneity of variance indicated that the population variance did not differ markedly from equality, an analysis of covariance was performed. This analysis of covariance was used in order to find if it was possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools, before they had attended the different senior high schools, on the basis of the eight SSHA factor scores. The Pineo-Porter Measure of Occupational Prestige was the covariate.

The results of the analysis of covariance indicated that only on factor five was any significant discrimination among the senior high school sub-samples possible (Table XI).

TABLE XI

SUMMARY OF ANALYSIS OF COVARIANCE OF THE SCORES ON FACTOR FIVE ON THE PRE-TREATMENT TEST DATA FOR THE EIGHT SENIOR HIGH SCHOOL SUB-SAMPLES

Sources of Variation	Degrees of Freedom	Variance Estimate	Adjusted F. Value	Sig.
Between	7	60.93	2.71	$p < .01$
Within	158	22.42		

The results of the t tests, presented in Table XII indicate that only between senior high school sub-samples 1A and 1B was the probability of difference between the pairs of means beyond the .05 level before a year in different senior high schools.

TABLE XII

SUMMARY OF t TESTS TO DETERMINE THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE ADJUSTED MEANS OF THE PAIRS OF SENIOR HIGH SCHOOL SUB-SAMPLES ON FACTOR FIVE

Sub-Sample	Adjusted Mean	t Value	Degrees of Freedom	Sig.
1A	15.80	2.25	52	$p < .05$
1B	19.07			
2C	17.14	.22	37	N.S.D.
2D	17.62			
3C	17.33	1.52	53	N.S.D.
3D	15.30			
4E	20.34	.11	19	N.S.D.
4F	19.92			

In summary, it was found that only on one of the eight SSHA factor was any discrimination among the senior high school sub-samples possible, and that this discrimination was possible only between one of the four pairs of means. It was therefore concluded that the probability of discriminating between the students who graduated from the same junior high school and then attended different senior high schools before the year in different senior high schools on the basis of the SSHA factor scores was very small.

The second part of the investigation, to find out if it

would be possible to discriminate between groups of students who graduated from the same junior high school after the year in different senior high schools entailed performing a second analysis of covariance, this time using the post-treatment test data.

The results of the analysis of covariance on the post-treatment test data indicated that on factor one and factor six significant discrimination among the eight senior high school sub-samples was possible (Tables XIII and XIV).

TABLE XIII

SUMMARY OF ANALYSIS OF COVARIANCE OF THE SCORES ON FACTOR ONE ON POST-TREATMENT TEST DATA FOR THE EIGHT SENIOR HIGH SCHOOL SUB-SAMPLES

Sources of Variation	Degrees of Freedom	Variance Estimate	Adjusted F. Value	Sig.
Between	7	98.37	2.25	$p < .05$
Within	158	43.58		

TABLE XIV

SUMMARY OF ANALYSIS OF COVARIANCE OF THE SCORES ON FACTOR SIX ON POST-TREATMENT TEST DATA FOR THE EIGHT SENIOR HIGH SCHOOL SUB-SAMPLES

Sources of Variation	Degrees of Freedom	Variance Estimate	Adjusted F. Value	Sig.
Between	7	55.27	2.52	$p < .05$
Within	158	21.89		

t tests were utilized in order to find whether this difference was across sub-samples or whether the difference was between sub-samples of students who had graduated from the same junior high school and then attended different senior high schools.

The results of the t tests indicated that there were no significant differences between the groups of students who graduated from the same junior high school and then attended different senior high schools (Tables XV and XVI).

TABLE XV

SUMMARY OF t TESTS TO DETERMINE THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE MEANS OF THE FOUR PAIRS OF SENIOR HIGH SCHOOL SUB-SAMPLES ON FACTOR ONE ON THE POST-TREATMENT TEST DATA

Sub-Sample	Adjusted Mean	t Value	Degrees of Freedom	Sig.
1A	34.22	1.31	52	N.S.D.
1B	31.60			
2C	30.10	.62	35	N.S.D.
2D	28.16			
3C	28.25	1.80	53	N.S.D.
3D	31.67			
4E	28.33	.40	19	N.S.D.
4F	29.67			

TABLE XVI

SUMMARY OF t TESTS TO DETERMINE THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE MEANS OF THE FOUR PAIRS OF SENIOR HIGH SCHOOL SUB-SAMPLES ON FACTOR SIX ON THE POST-TREATMENT TEST DATA

Sub-Sample	Adjusted Mean	t Value	Degrees of Freedom	Sig.
1A	6.69	.76	52	N.S.D.
1B	7.73			
2C	9.25	.01	35	N.S.D.
2D	9.61			
3C	12.08	1.83	53	N.S.D.
3D				
4E	10.40	1.14	19	N.S.D.
4F	8.32			

Because the results of the t tests indicated that it was not possible to discriminate between groups of students who graduated from the same junior high school and then attended different senior high schools, on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores, it must be concluded that Hypothesis II is not supported.

CHAPTER V

CONCLUSIONS AND DISCUSSION

Two conclusions can be drawn from the results of this research. Firstly, it was not possible to discriminate among students graduating from different junior high schools on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores. Secondly, that after one year in high school, it was not possible to discriminate among students who graduated from the same junior high school and then attended different senior high schools, on the basis of Brown-Holtzman Survey of Study Habits and Attitudes factor scores.

There are no doubt many possible reasons for the lack of support for the two hypotheses. At best one can only offer conjecture as to the reasons. It is possible that in each school, the study habits and attitudes of individual students were influenced by a number of different models. With the result that it was not possible to discriminate among students from the different schools because there was no clear cut modeling effect peculiar to each set of models within the different schools.

It is also possible that when the graduates of the different junior high schools attended the different senior high schools, they sought out acquaintances whom they felt would have interests and attitudes similar to their own, and accepted these persons as

models. The results of this action being that the study habits and attitudes which the students had developed before entering high school were reinforced rather than changed as a result of their new associations.

The finding that the graduates from the separate junior high school were significantly different from the graduates from all three of the public junior high schools on factor five (pg. 43) may be significant but due to the small, unrepresentative sample in this research, no valid conclusion regarding this finding could be reached.

Further investigation to find whether junior high students in the separate school system feel more dissatisfied with school authorities than junior high students in the public school system may be beneficial to educators.

Further research to examine the use of principles of social learning in explaining the development of student study habits and attitudes might be designed to test the validity of these principles rather than just introduce them as hypothetical explanations of any changes in study habits and attitudes.

Research of this type could proceed according to the following general design. The investigator could first obtain the services of a number of teachers within a school who according to the principles of social learning would be expected to serve as models to the students with whom they come in contact. These teachers would have to be selected so that students for whom they may

serve as models do not come in any significant contact with any of the other teacher models. Arrangements could then be made to have these models exhibit different study habits and attitudes while in contact with their groups of students. The investigator could obtain measures of the study habits and attitudes of students within the various groups both before and after a school term. Statistical analysis could then be used in order to see whether or not contact with a particular model resulted in the imitation of the study habits and attitudes which were exhibited.

The results of this research indicates that groups of students do not develop different study habits and attitudes as a result of attending different schools. This finding however, does not preclude the possibility that there may be factors within the schools which influence the study habits and attitudes of individual students. Research to identify these factors and the conditions under which they operate would be of benefit to educators in improving students' academic achievement.

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A P P E N D I X E S

Survey of Study Habits and Attitudes

DIRECTIONS

The purpose of this survey is to furnish an inventory of study habits and attitudes to serve as a foundation for self-improvement. If taken seriously, this inventory can help you obtain a better understanding of how to study properly. If you will honestly and thoughtfully mark all of the statements on the pages that follow, you will be able to learn many of your study faults. The value of this survey to you will be in direct proportion to the care with which you mark each statement. Since your answers will be treated with the strictest confidence, feel free to answer all questions frankly.

You will mark your answers on a separate answer sheet. Make no marks on this booklet. There are 75 statements in this questionnaire. For each statement a five-point scale is provided for indicating whether you rarely, sometimes, frequently, generally, or almost always do or feel as the statement suggests. You are to rate yourself on each statement by marking the space on your answer sheet that represents your answer choice. Thus, for example, you would mark space R on your answer sheet if you *rarely* follow the procedure described or if you feel that the statement is *rarely* true for you. In marking your answers, be sure that the number of the statement agrees with the number on the answer sheet. Make sure that your marks are heavy and black. Make no stray marks on the answer sheet and erase completely any mark that you wish to change.

To aid you in answering this questionnaire, the terms have been defined on a percentage basis as follows:

R—RARELY means from 0 to 15 per cent of the time.

S—SOMETIMES means from 16 to 35 per cent of the time.

F—FREQUENTLY means from 36 to 65 per cent of the time.

G—GENERALLY means from 66 to 85 per cent of the time.

A—ALMOST ALWAYS means from 86 to 100 per cent of the time.

Remember, you are asked to rate yourself, not in accordance with what you think you *should* do or feel, or as you think *others* might do or feel, but as you yourself are in the habit of doing and feeling. When you cannot answer a statement on the basis of actual experience, mark the statement according to what you would be most likely to do if the situation should arise.

There are no “right” or “wrong” answers to these statements, and there is no time limit for this questionnaire. Work as rapidly as you can without being careless, and do not spend too much time on any one statement. Please do not omit any of the statements.

R—RARELY

S—SOMETIMES

F—FREQUENTLY

G—GENERALLY

A—ALMOST ALWAYS

1. I feel that teachers do not understand the student's problems.
2. My dislike for a certain teacher causes me to neglect my school work.
3. I feel that I would study harder if I were given more freedom to choose courses that I like.
4. Whether I like a course or not, I still work hard to make a good grade.
5. When my assigned homework is extra long or unusually difficult, I become discouraged and either quit in disgust or skip hurriedly through the assignment, studying only the easier parts of the lesson.
6. In preparing reports, themes, term papers, etc., I make certain that I clearly understand what is wanted before I begin work.
7. Difficulty in expressing myself in writing slows me down on reports, themes, examinations, and other work to be turned in.
8. My teachers criticize my written reports as being hastily written or poorly organized.
9. I feel that teachers allow their personal like or dislike for a student to influence their grading unduly.
10. I lose interest in my studies after the first few days or weeks.
11. I memorize grammatical rules, definitions of technical terms, formulas, etc., without really understanding them.
12. I give special attention to neatness on themes, reports, and other work to be turned in.
13. I take it easy and let my assignments collect for the first two or three weeks of a new semester.
14. I hesitate to ask the teacher for further explanation of an assignment that is not clear to me.
15. Lack of interest in my school work makes it difficult for me to keep my attention focused on assigned reading.
16. Unless I really like a course, I believe in doing only enough to get a passing grade.
17. I get nervous and confused when taking an examination and fail to answer questions to the best of my ability.
18. I have trouble with the mechanics of English composition.
19. When I get behind in my school work for some unavoidable reason, I make up back assignments without prompting from the teacher.
20. I feel confused and undecided as to what my goal in life should be.
21. Some of my courses are so uninteresting that I have to "force" myself to do the assignments.
22. When I am under pressure, my work is inferior in quality.
23. Daydreaming about dates, future plans, etc., distracts my attention from my lesson while I am studying.
24. I believe that having a good time and getting one's full share of fun out of life is just as important as studying.
25. Even though an assignment is dull and boring, I stick to it until it is completed.
26. In taking reading notes, I tend to take down material which later turns out to be unimportant.
27. In taking class notes, I try to copy down the teacher's exact words as closely as possible.
28. I keep all the notes for each subject together, carefully arranging them in some logical order.
29. When I am having difficulty with my school work, I try to talk over the trouble with the teacher.
30. I feel that my grades are a fairly accurate reflection of my ability.
31. I feel that it is not worth the time, money, and effort one must expend to get a college education.
32. Difficulty in assembling ideas with order and clearness within a brief amount of time results in my doing poorly on examinations.
33. Some of my classes are so boring that I spend the class period drawing pictures, writing letters, or daydreaming instead of listening to the teacher.
34. I lay aside returned examinations, reports, and homework assignments without bothering to correct errors noted by the instructor.
35. I keep my place of study business-like and cleared of unnecessary or distracting items such as pictures, letters, mementos, etc.
36. Telephone calls, people coming in and out of my room, "bull-sessions" with my roommate, etc., interrupt me while I am trying to study.
37. It takes a long time for me to get warmed up to the task of studying.

R—RARELY

S—SOMETIMES

F—FREQUENTLY

G—GENERALLY

A—ALMOST ALWAYS

38. I am unable to concentrate well because of periods of restlessness, moodiness, or "having the blues."
39. I put off writing themes, reports, term papers, etc., until the last minute.
40. I feel that I am taking courses that are of little practical value to me.
41. When I sit down to study I find myself too tired, bored, or sleepy to study efficiently.
42. I strive to develop a sincere interest in every course I take.
43. The prestige of having a college education provides my main motive for going to college.
44. I think that maybe I should drop out of school and get a job.
45. I carefully study the figures, graphs, and tables in a reading assignment.
46. Prolonged reading or study gives me a headache.
47. After reading several pages of an assignment, I am unable to recall what I have just read.
48. I cut classes whenever there is something I'd rather do or whenever I need to cram for a test.
49. I waste too much time "chewing the fat," reading magazines, listening to the radio, going to the movies, etc., for the good of my studies.
50. My studying is done in a random, unplanned manner and is impelled mostly by the demands of approaching classes.
51. "Extracurricular activities" — dating, clubs, athletics, fraternity and sorority activities, etc. — cause me to get behind in my school work.
52. I utilize the vacant hours between classes for studying so as to reduce the evening's work.
53. Problems outside of school — financial difficulties, being in love, conflict with parents, etc. — cause me to neglect my school work.
54. I am on time with written assignments.
55. I have difficulty in picking out the important points of a reading assignment — points that are later asked on examinations.
56. When in doubt about the proper form for a written report, I refer to an approved model to provide a pattern to follow.
57. I like to have the radio playing while I'm preparing my homework.
58. When reading a long assignment, I stop periodically and mentally review the main facts and theories that have been presented.
59. I seem to accomplish very little in relation to the amount of time I spend studying.
60. I prefer to sit in the back of the classroom.
61. With me, studying is a hit-or-miss proposition depending on the mood I'm in.
62. I study three or more hours per day outside of class.
63. Before each study period I set up a goal as to how much material I will cover.
64. I can concentrate on a reading assignment for only a short while before the words become a meaningless jumble.
65. I am interrupted by distracting noises while I am studying.
66. I copy the diagrams, drawings, tables, and other illustrations that the instructor puts on the blackboard.
67. I keep my assignments up to date by doing my work regularly from day to day.
68. I prefer to study my lessons alone rather than with others.
69. I lose points on true-false or multiple-choice examinations because I change my original answer only to discover later that I was right the first time.
70. When preparing for an examination I arrange facts to be learned in some logical order — order of importance, order of presentation in class or textbook, order of time in history, etc.
71. I am careless of spelling and in the mechanics of English composition when answering examination questions.
72. Although I work until the last possible minute, I am unable to finish examinations within the allotted time.
73. If time is available, I take a few minutes to check over my answers before turning in my examination paper.
74. When test papers or written assignments are returned, I find that my grade was lowered by careless mistakes.
75. I think that questionnaires such as this are foolish and are of little or no help to anyone.



PINEO-PORTER MEASURE OF OCCUPATIONAL PRESTIGE SCORES BY OCCUPATIONAL
CLASSES USED TO CLASSIFY RESPONDENTS

Occupational Title	Score	Occupational Title	Score
<u>Professional</u>		<u>Semi Professional (con't)</u>	
Accountant	63.4	Jazz Musician	40.9
Architect	78.1	Journalist	60.9
Biologist	72.6	Medical or Dental Technician	67.5
Catholic Priest	72.8	Musician	52.1
Chemist	73.5	Musician in a Symphony	
Civil Engineer	73.1	Orchestra	56.0
County Court Judge	82.5	Physiotherapist	72.1
Druggist	69.3	Playground Director	42.8
Economist	62.2	Professional Athlete	54.1
High School Teacher	66.1	Professionally Trained	
Lawyer	82.3	Forester	60.0
Mathematician	72.7	Professionally Trained	
Mine Safety Analyst	57.1	Librarian	58.1
Mining Engineer	68.8	Registered Nurse	64.7
Physician	87.2	Research Technician	66.9
Physicists	77.6	Sculptor	56.9
Protestant Minister	67.8	Social Worker	55.1
Psychologist	74.9	Surveyor	62.0
Public Grade School		T.V. Announcer	57.6
Teacher	59.6	T.V. Cameraman	48.3
University Professor	84.6	T.V. Director	62.1
Veterinarian	66.7	T.V. Star	65.6
		YMCA Director	58.2
<u>Semi Professional</u>		<u>Proprietors, Managers and</u>	
Airline Pilot	66.1	<u>Officials, Large</u>	
Author	64.8	Administrative Officer in	
Ballet Dancer	49.1	Federal Civil Service	68.8
Chiropractor	68.4	Advertising Executive	56.5
Commercial Artist	57.2	Bank Manager	70.9
Computer Programmer	53.8	Building Contractor	56.5
Disc Jockey	38.0	Colonel in the Army	70.8
Draughtsman	60.0	Department Head in City	
Funeral Director	54.9	Government	71.3

Occupational Title	Score	Occupational Title	Score
<u>Proprietors, Managers and Officials, Large (con't)</u>		<u>Proprietors, Managers and Officials, Small (con't)</u>	
General Manager of a Manufacturing Plant	69.1	Railroad Ticket Agent	35.7
Mayor of a Large City	79.9	Sawmill Operator	37.0
Member of Canadian Cabinet	83.3	Service Station Manager	41.5
Member of Canadian House of Commons	84.8	Ship's Pilot	59.6
Member of Canadian Senate	86.1	Superintendent of a Construction Job	53.9
Merchandise Buyer for a Department Store	51.1	Trade Union Business Agent	49.2
Owner of a Manufacturing Plant	69.4	Travel Agent	46.6
Provincial Premier	89.9		
Wholesale Distributor	47.9	<u>Clerical and Sales</u>	
<u>Proprietors, Managers and Officials, Small</u>		Air Hostess	57.0
Advertising Copy Writer	48.9	Bank Teller	42.3
Beauty Operator	35.2	Bill Collector	29.4
Construction Foreman	51.1	Bookkeeper	49.4
Driving Instructor	41.6	Cashier in a Supermarket	31.1
Foreman in a Factory	50.9	Clerk in an Office	35.6
Government Purchasing Agent	56.8	File Clerk	32.7
Insurance Claims Investigator	51.1	IBM Key punch Operator	47.7
Job Counsellor	58.3	Insurance Agent	47.3
Livestock Buyer	39.6	Manufacturer's Representative	52.1
Lunchroom Operator	31.6	Post Office Clerk	37.2
Manager of a Real Estate Office	58.3	Real Estate Agent	47.1
Manager of a Supermarket	52.5	Receptionist	37.8
Member of a City Council	62.9	Sales Clerk in a Store	26.5
Motel Owner	51.6	Shipping Clerk	30.9
Owner of a Food Store	47.8	Stenographer	46.0
Public Relations Man	60.5	Stockroom Attendant	25.8
		Telephone Operator	38.1
		Telephone Solicitor	26.7
		Travelling Salesman	40.2
		Truck Dispatcher	32.2
		Typist	41.9
		Used Car Salesman	31.2
		<u>Skilled</u>	
		Airplane Mechanic	50.3
		Baker	38.9
		Bricklayer	36.2

Occupational Title	Score	Occupational Title	Score
<u>Skilled (con't)</u>			
Butcher in a Store	34.8	Machine Operator in a	
Coal Miner	27.6	Factory	34.9
Cook in a Restaurant	29.7	Newspaper Pressman	43.0
Custom Seamstress	33.4	Oil Field Worker	35.3
Diamond Driller	44.5	Oiler in a Ship	27.6
Electrician	50.2	Paper Making Machine	
House Carpenter	38.9	Tender	31.6
House Painter	29.9	Policeman	51.6
Locomotive Engineer	48.9	Private in the Army	28.4
Machinist	44.2	Production Worker in the	
Machine Set-up Man in a		Electronics Industry	50.8
Factory	42.1	Professional Babysitter	25.9
Mucking Machine Operator	31.5	Quarry Worker	26.7
Plumber	42.6	Sewing Machine Operator	28.2
Power Crane Operator	40.2	Steam Boiler Fireman	32.8
Power Lineman	40.9	Steam Roller Operator	32.2
Pump-house Engineer	38.9	Steel Mill Worker	34.3
Railroad Brakeman	37.1	Textile Mill Worker	28.8
Railroad Conductor	45.3	Timber Cruiser	40.3
Saw Sharpener	20.7	Trailer Truck Driver	32.8
Sheet Metal Worker	35.9	Troller	23.6
T.V. Repairman	37.2	Worker in a Meat Packing	
Tool and Die Maker	42.5	Plant	25.2
Typesetter	42.2		
Welder	41.8	<u>Unskilled</u>	
<u>Semi-Skilled</u>			
Aircraft Worker	43.7	Carpenter's Helper	23.1
Apprentice to a Master		Construction Labourer	26.5
Craftsman	33.9	Elevator Operator in a	
Assembly Line Worker	28.2	Building	20.1
Automobile Repairman	38.1	Filling Station Attend-	
Automobile Worker	35.9	ant	23.3
Barber	39.3	Garbage Collector	14.8
Bartender	20.2	Hospital Attendant	34.9
Book Binder	35.2	Housekeeper in a Private	
Bus Driver	35.9	Home	28.8
Cod Fisherman	23.4	Janitor	17.3
Firefighter	43.5	Laundress	19.3
Fruit Packer in a Cannery	23.2	Mailman	36.1
Logger	24.9	Museum Attendant	30.4
Longshoreman	26.1	Newspaper Peddler	14.8
Loom Operator	33.3	Railroad Sectionhand	27.3
		Taxicab Driver	25.1
		Waitress in a Restaurant	19.9

Occupational Title	Score	Occupational Title	Score
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Unskilled (con't)

Warehouse Hand	21.3
Whistle Punk	18.4
Worker in a Dry Cleaning or Laundry Plant	20.8

Farmer

Commercial Farmer	42.0
Dairy Farmer	44.2
Farm Labourer	21.5
Farm Owner and Operator	44.1
Hog Farmer	33.0
Part Time Farmer	25.1

Not in Labour Force

Archaeopotrist	63.7
Biologer	64.2
Occupation of my family's main wage earner	50.9
Occupation of my father when I was 16	42.5
Someone who lives off inherited wealth	45.8
Someone who lives off property holdings	48.7
Someone who lives off Stocks and Bonds	56.9
Someone who lives on relief	7.3

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